

### REMARKS

Claim 6 was rejected, as set forth in paragraph 2 of the Office Action, under 35 U.S.C. § 112. Claim 6 has been amended to overcome this rejection.

Claim 4 was rejected under 35 U.S.C. § 103 over Digonnet, U.S. 4,938,556, as set forth in paragraph 4 of the Office Action. In paragraph 5, claim 6 was rejected under § 103 over Zawaideh, U.S. 5,889,592. Claims 1-3 were allowed, and claim 5 was objected to as being dependent upon a rejected base claim but indicated as allowable if rewritten in independent form including all limitations of claim 4.

Applicant respectfully traverses the rejection of claim 4 for at least the reason that there is no disclosure or teaching in Digonnet '556 to identify a relationship between, on the one hand, intensity of a light signal from a light source and, on the other hand, a difference between the light signal's wavelength spectrum and an expected wavelength spectrum.

In general, Digonnet recognizes (col. 23) that a superfluorescent fiber light source has an output wavelength spectrum that shifts to higher wavelengths with temperature change. Digonnet also recognizes (col. 22), however, that the filter function of coupler 104/304 shifts to lower wavelengths in response to temperatures. Thus, by choosing (col. 24) a coupler with a suitable downward shift, the effect of the fiber source's upward shift can be reduced or cancelled. For applications relating to gyroscope's, Digonnet emphasizes, at col. 24, lines 11-16, that the output spectrum should be made stable with respect to its average spectrum wavelength rather than its center wavelength.

There is no disclosure Digonnet, however, regarding a relationship between (1) the intensity of light from the light source and (2) a difference between that signal's wavelength spectrum and an expected spectrum. Nor does Digonnet therefore provide a teaching to modify the signal's wavelength spectrum responsively to such a relationship. Moreover, because the coupler's filter function defines an opposing temperature drift, there is no motivation in Digonnet to relate signal intensity to a difference between the signal spectrum and the expected spectrum.

For at least these reasons, claim 4 is allowable over Digonnet.

Applicant also respectfully traverses the rejection of claim 6 over Zawaideh for at least the reason that Zawaideh does not disclose or teach the definition of a relationship between change in spectral shape over the wavelength range of a light signal applied to a measurement

sample and change in input power to the source of the light signal, nor does Zawaideh disclose or teach relating a change in the spectral shape to a modification in the input power.

Zawaideh describes a relationship between a shift in power spectral density and the incident angle of a light signal to a film. Zawaideh shows that the spectrum of a thin film varies with incident angle and film's thickness. Zawaideh's reference to "power spectral density" does not refer to a relationship with input power but instead apparently refers to "spectral power density," which describes the amount of light intensity per unit wavelength. There is no teaching in Zawaideh to define a relationship between spectral shape and input power or, therefore, to relate a change in spectral shape to a modification in the input power. For at least this reason, claim 6 is allowable over Zawaideh.


Claims 1-5 have been amended to clarify relationships among certain terms in the claims. Additionally, the identifying step of claim 4 was amended to refer to a relationship between intensity of the light signal and a difference between the light signal's wavelength spectrum and expected spectrum. The amendment is intended to modify the scope of the claim and is independent of the analysis of Digonnet described above. That is, Digonnet does not anticipate, or make obvious, claim 4, before or after the amendment.

The amendments to claim 5 relating to the regression vector are prompted by the amendments to claim 4 relating to the identifying step.

Applicant submits that the application is in condition for allowance. Favorable action, and withdrawal of the outstanding rejections, is therefore respectfully requested. The Examiner is requested to contact the undersigned at his convenience should any issues remain.

Respectfully submitted,

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